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ABSTRACT

This study examined whether recent graduates of the Northfield Public Schools (Minnesota) had acquired the skills necessary to make successful transitions to adulthood and postsecondary education. Survey responses (n=146) were obtained from two recently graduated classes 3 years after graduation and from graduates of the Alternative Learning Center 1 year after graduation. The survey asked respondents to evaluate themselves in the following 11 areas: decision making, handling conflicts with other people, information gathering and management, intercultural awareness, looking for and keeping a job, mathematical reasoning, oral communication, personal awareness, reading, technological literacy, and writing. Graduates rated decision making, reading, and writing as the most frequently encountered, while handling conflicts with other people and intercultural awareness were the least frequently encountered. Graduates expressed the highest levels of confidence in looking for and keeping a job, reading, and intercultural awareness while least confident about technological literacy, oral communication, information gathering and management, and writing. Other findings addressed differences between high and low ability students and between males and females. The survey instrument is appended. (Contains 35 references.) (Author/JLS)

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TRANSITIONS TO ADULTHOOD

Prepared by the Northfield Educational Research Lyceum

February, 1997

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TRANSITIONS TO ADULTHOOD:

recent alumni's views of their academic, interpersonal and life skills

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Northfield Educational Research Lyceum; Northfield Public Schools; Northfield, MN

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Abstract

The objective of this study was to determine if recent graduates of the Northfield Public Schools had acquired the skills necessary to make successful transitions to adulthood once they had graduated and left the system. The Research Lyceum was aware of the potential effects that time and context could play in the responses of the individuals. Nevertheless, it was believed that if a school system was to possess the capability to be objective about the design of its program, data needed to be obtained that would provide some types of indicators that could point to strengths or weaknesses in the educational product. By gathering data on how well post-high school students were faring in their ability to apply the subject matter taught in school to an often difficult and highly transitory period in their lives, the Lyceum believed it could gain insights and draw conclusions that would enhance the school's educational program.

Executive Summary

This research project examined the application of skills during that transitional period of life directly following high school graduation. Initial theory grounding was obtained by a literature review, discussions with local educators, and lyceum presentations from business employers, technical college counselors, and academic college personnel. From these discussions and meetings, a series of common themes emerged that eventually became the basis for the eleven domains which the research investigated. These domains included: decision making, handling conflicts with other people, information gathering and management, intercultural awareness, looking for and keeping a job, mathematical reasoning, oral communication, personal awareness, reading, technical literacy, and writing.

An instrument was designed with Likert rating scales to measure the respondents' perceptions of their levels of experience, skill, confidence and frequency of occurrence pertaining to each domain. Respondents were also asked to write comments to several open-ended questions dealing with their own perceived strengths and weaknesses relating to the domains, and to suggest what they believed would have improved their schooling both during, and prior to, their high school years. By analyzing both the quantitative and qualitative responses, linkages were sought to identify connections between the respondent's perceived ability to apply the tools described in the eleven domains and the school district's curricular program.

In analyzing the data, the domains were addressed both individually and grouped into three larger skill areas, namely, academic, interpersonal, and life skills. Included in the academic skills area were the domains of mathematical reasoning, oral communication, reading and writing. Combined in the area of interpersonal skills are the domains of handling conflicts with other people, intercultural awareness, and personal awareness. Life skills included decision making, information gathering and management, looking for and keeping a job, and technological literacy.

The results of the study found that in general, recent graduates expressed a high level of satisfaction with their education, and rated it quite positively. However, nearly half of them said that increasing academic rigor and opportunities would have improved their high school program. In addition, nearly a third of the respondents felt that increasing academic rigor prior to high school would have been helpful for them.

The domains within the academic skills area all had relatively high mean ratings in experience and frequency, while the mean ratings for these same domains in skill

and confidence were mixed. When the essay comments associated with these domains were taken into account, a pattern emerged that showed both relatively high numbers of respondents that claimed these domains as particular strengths as well as high numbers that claimed them as particular weaknesses. What this may be saying is that although there is a relatively large majority of the graduates that are faring well and are able to readily apply these academic skills, there is also a significant proportion of the sample, that although graduated, has not assimilating these skills to a level that makes them feel confident about their ability to apply them.

The domains associated with interpersonal skills received very high mean ratings in the areas of experience, skill and confidence, but relatively low ratings in terms of frequency. This indicates, perhaps, that these recent graduates feel both skillful and confident about their interpersonal abilities, but do not have occasion to draw upon these skills very often. In written comments, students who listed these domains as areas of strength tended to disassociate these characteristics with schooling, referencing instead their personal makeup, which they described as being derived either from biological inheritance or contextual factors based mostly outside of school. Conversely, those students who listed these domains as a weakness tended to ask why the school hadn't been more helpful in addressing their problems.

The rated means of the life skills group ranked lowest in experience, skill, and confidence, but ranked at the midpoint in terms of frequency. Unique from this generalization were the domains of looking for and keeping a job, which received the second highest mean rating in skill and the highest mean rating in confidence, and technological literacy, which received the second lowest mean rating in experience and the lowest means in both skill and confidence. Both information gathering and management and technological literacy were cited more often as particular weaknesses than as a strengths by a margin of greater than two to one. In fact, thirty-five percent of the respondents mentioned technological literacy in their written essays, with sixty-nine percent of that group citing it as a weakness.

The last open-ended essay question on the survey asked the former students to mention the one best thing that came to mind when they thought about the time they spent in the Northfield Schools. Two categories dominated the answers -- teachers and friends. Together, the two categories were listed by well over half of the respondents, attesting, most probably, to the intensity and importance of human interaction and individual social relationships in the educational experience.

Background

Perspectives

One does not need to look far to find criticism of our nation's public schools. School purpose and productivity have provided the fuel for debate by scholars, business leaders, politicians and private citizens. Although Americans have always taken a keen interest in their schools, it was not until the report titled *A Nation at Risk* appeared in 1983, that concern about school productivity and educational standards was raised on a broad scale. The *Risk* report basically stated that the standards of American public schools were set too low, and that as a nation, we were losing ground against other countries. (NCEE, 1983)

In the last decade, many position statements and studies detailing assumptions of what might lead to school problems and low student performance have appeared. Organized around a wide spectrum of presumed causal relationships, these arguments for school reform have included such issues as student economic, race and ethnicity factors, the financial condition of schools, the length of the school year and school day, grading practices, how students spend their personal time outside of school, the preparation and training of teachers, alternative systems of school governance, and parental involvement in the educational process. Recently, the state-wide setting of standards for grade promotion and graduation has been included in the arguments for bettering schools.

While each of these issues may contain keys to providing a better educational product on a large indeterminate scale, on the localized level, questions regarding individual school effectiveness often remain unanswered. For example, how good is the education provided by the schools here in Northfield? Are students of the Northfield Public Schools obtaining the tools and assimilating the material that will help them make successful transitions into a productive and rewarding life once they leave school? Are they prepared well enough academically to enter the college of their choice? Have they received the basic skills and understanding that will give them an advantage in seeking the job they prefer? In summary, are they ready to make the transition to what life has to offer or to what society expects of them once they leave the structured routine of public school?

Locally, the citizens of the Independent School District 659, have provided strong support for their schools. Superintendent Dr. Charles Kyte gave this assessment of community support:

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> There are many ways in which the Northfield community shows its support for our school system. Every day many adults volunteer their time and talents to our classrooms and to our extra-curricular activities. The parent-teacher-student organizations are very active and effective groups in every school. Northfield citizens have also supported the district by passing bond referendum and levies for the building of new classrooms and to support needed programming changes and improvements. Local businesses have been very generous in providing support for programming and in offering job training opportunities to our students. This community shows its support for our public education system every single day. (Quote from interview with Communications Director Lynne Reeck, 11/96)

Yet even with a strong supportive community, good facilities, a stable financial history, high parental involvement and a well-trained staff, there still is little way of knowing if what the school district and community furnishes for its student clientele is serving the intended purpose of preparing them for life beyond twelfth grade. In the spring and summer of 1995, as the Lyceum was discussing educational issues and considering a variety of possible topics to study, certain questions similar to the ones listed above seemed to occur frequently as probable links to addressing more detailed issues.

It eventually became apparent to the group that much of what might be studied at a later date should be preceded with information from locally referenced data as opposed to position statements and opinions. Specific details needed to be found that could identify strengths and weaknesses in the educational program. This information should be factual, well supported by data, and rigorously analyzed. It needed to be more than grade point averages and national test scores. Of greater importance was how our young people were faring once they left school. Simply put, did what they learned in school help them meet the challenges that awaited them after graduation?

Three obstacles provided major challenges for this research project. These three obstacles were realized relatively early in the discussion, and substantial efforts were generated to surmount them. The first dealt with the acknowledgment that many contextual factors outside of school combine to help educate a young person. Schools alone are far from providing the sole source of a child's educational experience. Compounding this was the pervasive fact that there may be no reasonable way of separating learning experiences by source.

The second obstacle dealt with the passage of time and the ability of the respondents to separate and account for specific learning experiences that may have occurred years earlier. Unlike many transitions studies that focus solely on either workplace or college preparation, the plan of this study was to examine

eleven domains that were judged by the research committee to be generally representative of needed "life skills". With a typical public school education spanning a thirteen-year period of time, could accurate associations still be made several years after a concept or skill had been introduced in the classroom? At what point in the life of the student was the concept or skill assimilated into real life situations? What if the need to assimilate the concept or skill had not yet occurred? Finally, and in conjunction with the first obstacle, what role did influences outside of school play in the assimilation of the concept or skill?

The third obstacle dealt with deciding what outcome measures ought to be used, and what defines success. We realized that this was a very ambiguous area, both from the standpoint that these young people had only recently graduated from high school and had probably not yet settled into a consistent life pattern, and because social expectations for high school graduates are neither clearly defined or communicated by society. Therefore, we started by looking at the graduates own perceptions of how well they believed they were prepared to meet the challenges they faced.

These three obstacles of context, time, and measurable outcomes, provided a means of bounding this research project in terms of keeping a focus on the limitations of what could be reasonably studied. It also provided an opportunity to look at how the individual was adapting to life while gaining some insights into the individual's specific learning characteristics. With this in mind, the research team set about designing an instrument that would have the respondent rate himself or herself in eleven domains, measuring the levels of experience, skill, confidence and frequency in each domain.

Throughout this study, the Lyceum made special efforts not to overlook the messages of individual respondents for the sake of presenting a quantifiable data set. The idea that individual students own individual perceptions, and that these perceptions are individually important, was an ongoing theme in the data analysis process. In addition to a rating section, the survey asked a number of open-ended questions that the respondents had the option of answering. Over 99% of the respondents added written comments explaining a variety of circumstances and events that they related to their educational experiences in Northfield.

With this large batch of information, the research team believed it could identify trends and make logical findings about the strengths and weaknesses of the educational program both on a collective and individual basis. At the same time, the group was well aware that following this route to construct any argument on any issue dealing with schooling would be tentative at best since time and events also have ways of affecting culture and thought processes. For most of the respondents, fourteen to sixteen years had passed since they first started

kindergarten, and educational emphases had likely changed during that period.

Literature Review

Nearly three decades ago, Professor William Brookhover of Michigan State University wrote:

> "We have noted that the American Educational practice has become dysfunctional for American society today. This is particularly true for the school system which directs many into unskilled and unproductive social roles. Contemporary American society and projections into the immediate future indicate that we need an increasingly large proportion of the work force with high levels of educational achievement. The local school systems have not risen to the challenge of contemporary education ..."
> (Brookhover, p.141)

Brookhover was making statements such as these at a time when society was just beginning to emerge from a belief in the concept of a so called "fixed intelligence", where the ability to learn was relatively unchangeable, and where intelligence was predetermined by heredity. He goes on to explain that "the responsibility for failure to learn in school was ascribed to either the child's willful abstinence or the teacher's incompetence. The concept of fixed and limited intelligence excused both from any responsibility." (Brookhover, p. 3)

The debate over what constitutes intelligence, coupled with debates over the responsibilities of the public schools in preparing students, along with the definition of what constitutes learning, have fueled arguments through much of the twentieth century. These issues have often led to discussions about educational reforms dealing with teaching methodologies and programs designed solely on speculations of how students learn best. Richard Prawat, Professor of Educational Psychology at Michigan State University, summarizes:

> Once again, the third time this century, we are in the midst of a major educational reform effort that pits progressives, who favor an activity-oriented approach to schooling, against conservatives, who advocate a more traditional, no nonsense approach. The current argument, on the activity-oriented side, goes something like this: Like past reforms, this reform reflects a shift in focus away from the teacher who, as agent of the community, is responsible for inculcating certain well-defined skills in students, toward the learner, whose own interests and propensities are once

> again being brought to the fore. The theoretical rationale for this shift in focus is constructivist theory, which questions the common-sense notion that knowledge can be transmitted from teacher to student, arguing, instead, for a model that places much greater responsibility on the learner. (Prawat, p. 13)

Constructivism has arguably become the leading reform movement in educational theory. It is not localized to one community, region, or country; rather it has achieved an international following, and with that following, an equally large number of opponents. As Dean Denis Phillips of Stanford University states:

> Across the broad fields of educational theory and research, constructivism has become something akin to a secular religion. As in all living religions, constructivism has many sects - each of which harbors some distrust of its rivals. This descent into sectarianism, and the accompanying growth in distrust of nonbelievers, is probably the fate of all large-scale movements inspired by interesting ideas. (Phillips, p. 3)

This brief foray into just one current educational issue serves as a reminder to anyone even remotely associated with education of the complexity of defining the objectives of educational programs. With many agendas probing and prodding local public schools, how can any school system achieve coherence and purpose? Put more succinctly, how can school productivity be defined and measured?

Many arenas ranging from school governance to educational philosophy could be debated here, but the review of literature for this study will focus on three arenas of defining educational output that presumably have some impact on that transitional period in a student's life when they leave the public school system and begin to find their place in society. These three arenas are values acquisition, academic preparation, and skills preparation, all of which draw strong parallels to the interpersonal, academic, and life skills addressed by this study.

William J. Bennett, former Secretary of Education writes:

> What do we want our graduates to be like? My view is that education's fundamental purpose concerns the nurture and development of intellectual and moral character. It seems to me that is the central purpose of the enterprise. When the American people are asked what they want from their schools, they consistently put two tasks at the top of their list: First, teach children how to speak, write, think and count correctly; second, help them to develop reliable standards of right and wrong that will guide them through life. (Bennett, p.17)

Images and statements such as these can be traced back to Thomas Jefferson, the statesman often credited with establishing the first public schools, and although the basic concept has remained relatively unchanged for generations, the process of instilling these values has been altered. Nancy Magnusson Fagan (1992) offers a contemporary perspective:

> Since its inception, the American public school has upheld its mandate to prepare the nation's children for participation in a democratic society. It has done this by instilling a respect for law and individual rights as well as by promoting voluntary participation in the common weal and by engendering concern for the common good. Historically, the school shared with the family and with religious institutions the responsibility for teaching core values such as honesty, integrity, self-respect, and justice. The traditional role of the public school was to reinforce values already instilled by parents and imbued by religion. Today, schools face the unprecedented challenge of instilling values largely without the participation of the family or organized religion. (Fagan p.53-54)

"The Year of Values" for the Northfield Public School District was declared in the summer of 1995, by Superintendent Charles Kyte. In a letter to all parents, he explained the course of action that the district would take.

> During the 1995-96 school year, the school district will bring a re-emphasis to the teaching of "values" throughout the school system. We want to encourage a return to a safer, more polite and respectful society. We recognize this must be done through the education of children.... We will emphasize values such as trustworthiness, respect, responsibility, fairness, caring and citizenship at all levels throughout the school system.

The focus on values continued to be one of the guiding themes into the 1996-97 school year. In his address to the staff during preschool workshops, Dr. Kyte noted that the values of civility and respect should continue to be emphasized.

Roots for the inclusion of these values into the public schools also can be found in research literature. Thomas Lickona (1988) reasoned that the commonly held values of learning communities should include nonviolence, respect for oneself and for others, respect for one's elders, belief in the importance of contributing to society, and the belief in the sanctity of life and liberty. He referred to the these values as summarizing the "fourth and fifth R's" of education, namely, *respect* and *responsibility*. (Lickona, p.36-38)

The idea of "values education" has also continued to grow on a national level. In the fall of 1996, the *PHI DELTA KAPPA INTERNATIONAL*, one of the most

highly respected educational organizations, announced the establishment of a "league of value-driven schools" which initially involved more than forty high schools that agreed to foster the development of positive beliefs and behaviors among students, teachers, administrators, and parents regarding certain core values focused on learning, honesty, cooperation, service to others, freedom, responsibility, and civility. (NN&Q 41,1)

Many additional references regarding the emergence of values as a viable part of the educational program could be located, but for the purpose of this report, the preceding should prove sufficient to show that there was a significant shift in the attitude of values education occurring in school systems both locally and nationally during the time that the group under study was in school.

The beginning of this *Literature Review* touched briefly on a debate about the process of learning. Conjointly, the second main tenet of this review will address academic preparation. A clear distinction needs to be drawn early between learning and assessment. This study was not designed to be another exercise in academic or skill assessment of the graduates. Rather, it was designed to determine the degree to which recent graduates were able to use the tools and information they had acquired during their K-12 years.

Through much of the past two decades, schools have labored under a barrage of criticism claiming inadequate academic preparation of students. This criticism has come from research organizations, academic communities and the business world. During most of the time the subjects for this study were attending public school classes, school districts across the nation were being compared with schools from other cultures and countries, and judgments were leveled against American public schools claiming that falling behind in academic achievement would cause the United States to lose its competitive economic edge.

> International comparisons have played a prominent role, sometimes explicitly and sometimes implicitly, in the debate about standards. The fourth national education goal is quite explicit in this regard: "By the year 2000, U.S. students will be first in the world in science and mathematics achievement." When a global reference is not an explicit part of a stated goal there are still frequent references to the need for international benchmarks and the desirability of keying standards to "world-class levels of performance"(NCEST, 1992, p.i). Moreover, even when not mentioned, the international emphasis is evident from the context that stresses global economic competition and assumes that there is a close link between a nation's educational achievement and its economic competitiveness. (Linn & Baker, p.406)

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As noted earlier, the practice of making comparisons of academic achievement has deep roots. In 1975, the International Association for the Evaluation of Educational Achievement reported in its first International Mathematics Study that: "The average mathematics score among United States high school graduates is far below that of all other countries....but when we compare the average score of the top 4%, the U.S. students score at about the same level as those in other countries." (Husen, p 130)

Regardless of the motivation or compatibility of international comparisons, the result has been to draw attention to the academic accountability of schools and spur a whole barrage of criticism and restructuring programs aimed at improving student academic performance, most notable of which has been the setting of graduation standards by many states, Minnesota among them.

Students attending Northfield schools were affected by the attention given to academic preparation. As early as 1990, Superintendent Kyte, again addressing staff in preschool workshops, encouraged a strengthening of educational standards by drawing attention to increasing academic rigor in all classrooms. In 1995, the district established a position for Coordinator of the Graduation Rule, and in 1996, complied with the initial state-wide testing of math and reading, two skills in which students will eventually have to meet state-mandated assessment levels as a requirement for graduation.

Again, the subjects under study for this report found themselves at the cusp of a major change in the educational program. While they were attending classes, agents and agencies were working hard to define academic achievement and establish standards aimed at improving the system.

The third arena, skills preparation, is a bit more vague and less easily definable than either value acquisition or academic preparation. In several ways, the term 'skills' is related to both of these two previous areas. For example, skills in education is often used to describe academic assessment levels in various disciplines such as those associated with the Basic Skills Tests of the Minnesota Graduation Rule. In the workplace, skills are defined in a variety of ways. Relating to values, skills can mean getting along with others and taking responsibility for one's own effort and actions. Another definition of skills in the workplace might include technical competence. For the purpose of this study, 'skills preparation' in school will focus primarily on those vocational and work-related skills needed to be successful and competent on the job.

Like both of the two previously discussed arenas, skills preparation has also been subject to changing attitudes and demands. The 1991 SCANS (Secretary [of Labor's] Commission on Achieving Necessary Skills) report, *What Work Requires*

of Schools, noted that the high-skills workplace requires a range not only of basic skills such as reading, writing, math, listening, and speaking, but also of thinking skills such as decision making, problem solving and knowing how to learn as well as such personal qualities as responsibility, sociability, self-management, integrity, and honesty.

W. Norton Grubb, Professor of Graduate Education at Berkeley, summed it up this way: "The skills employers want are not those of conventional vocational education." He then goes on to describe the makeup of an appropriate educational curriculum in a contemporary vocational-technical learning experience:

> The metaphor of cognitive apprenticeship captures this approach. Just as apprentices learn their tasks in the context of ongoing work, so too the student-as-apprentice-learner would learn academic competencies in some meaningful context. Simpler components would be mastered before moving on to more difficult tasks; the master or teacher would provide guidance at early stages and then allow the apprentice/student to do more. The teaching would include not only a complete range of technical skills but also the interpersonal skills, the customs, and the culture of the craft. (Grubb, 1996, p.536)

Emphasizing the inclusion of higher-order thinking skills and academics in the technical skills curriculum Grubb notes: "The recommendations of SCANS and other advocates of preparation for the high skill workplace shift education in the direction of meaning-making because of their emphasis on higher-order thinking skills, problem solving, contextualized instruction and the like -- but they have not abandoned academic content." (p.536)

The demands placed on technical skills education at the high school level has had the effect of causing the program to branch into quite different directional categories. In one category are students simply eager to complete their high school education, receive a diploma, and find a job. For them, the thought of more education can wait until later; they are geared toward getting out of school and on with their lives. For many of these students, the ideal educational program includes an on-the-job mentorship program while still in high school. It is unlikely that any further schooling these students encounter would include training in reading, writing, math or history.

In another category are students preparing to spend a year or two in a technical college developing and refining the skills of a favored career. Ideally, these students will have had introductory courses in their choice of career area, and these courses will have been of high enough quality to enable them to compete in post-secondary school and the workplace.

In still a third category, are students planning to attend a four year academic institution, then turn to a technical school for career training. As Kenneth Gray, Professor of Education at Penn State notes, this is an ever enlarging group:

> One of the fastest-growing groups of students in higher education is known as the 'reverse transfers.' These individuals hold baccalaureate or even graduate degrees and enroll in one- and two-year certificate or associate's degree programs in occupational and technical areas. This phenomenon became so common in California that at one time the state decided to charge degree holders who enrolled in community colleges more per credit in an effort to ensure that spaces would exist for students who didn't have degrees. (Gray, p 532)

Whether fully understood by them or not, most students will have been told at some point in their high school training that they can expect to change their career several times during their lifetime. Perhaps that will be the only constant most students will share. The application of skills, academic knowledge and values will be tenured, individually, by each person.

Local Observations

At its August, 1995 meeting, the Northfield Educational Research Lyceum chose the broad subject of educational productivity as its next major study topic for the year. Some of the questions on the table were: How do graduates of the Northfield public schools fare in their post secondary life? Are they prepared for continued education, work and life choices? What strengths and weaknesses can students identify as they look back on their years in school? What roles have values, factual knowledge, and social relationships played in the educational process?

New to the Lyceum's procedure this year were some public forums featuring presentations and open discussions of the current project. On October 16, 1995, several Northfield and Faribault area business and education professionals gathered at the Northfield Public Library. Asked to "give your perspective on the strengths and weaknesses in preparation of today's young people as they present themselves to you in your setting," their responses helped narrow the focus on this year's Lyceum project from the more broad educational productivity to the final topic "Transitions to Adulthood: recent alumni's views of their academic, interpersonal and life skills." Forum panel members on October 16 were:

Ray Cox, President, Northfield Construction Company

Bonnie Klein, Secondary Equity, Minnesota Riverland Technical Institute

Maureen Lamb, Human Resources Department, Malt-O-Meal Company

Norma Malterer, Post Secondary Options Liaison, Minnesota Riverland Technical Institute

Mo Jeske, Cardinal Glass

Several themes emerged from the discussions at this meeting. There was some dissatisfaction with academic preparation in certain skill areas such as written and oral communication and math. However, more disturbing to employers and post secondary educators seemed to be lack of certain desirable behaviors in many young people that would enhance their value as employees. Without some of these behaviors already present in potential employees, employers and educators are finding it hard or impossible to properly train them even though the employers indicated that they can do remedial education and training in some skill areas needed for the job.

Malterer stated that job keeping skills are weak in many of today's young people with absenteeism and inappropriate behavior on the job as particular concerns. She indicated that interpersonal skills such as communication and getting along with others are the hardest to train, and overtime work is often necessary due to a poor employee pool. In her work, she helps students define what their school and home responsibilities are.

Some of the statistics Malterer brought to the discussion were that 65-75% of today's jobs need post high school education but less than a four year degree, yet we sent 75% of our students to a four-year college where only 27% graduate. Others go back to vocational or other training. She asserted that public education ill prepares the "normal" student, the average worker of the U.S. We need to talk early about a person's place in society, discussing different career paths, and provide more answers to the why of learning with applied courses in the real world emphasizing science, math, listening, and technical writing.

In Jeske's business, technical skills can be taught but tardiness is a real problem. Employees need math skills to work but most important to him is a real motivation for work in an employee. Cox agreed, stating that he wants a good work ethic in an employee: someone who is on time, presentable, can speak correctly, has basic skills in math and writing (skills mentioned were using a tape measure, adding

fractions, and reading a materials list).

In her work, Lamb receives 1500 applications for 100 positions. She stressed that prospective employees need good interviewing skills and that schools could start teaching toward that end in junior high. Other important skills are resume writing and information gathering to find out about other departments and companies. Having a only a high school diploma does not allow someone to make it through their screening; it is more competitive. She indicated that new employees often needed remedial training in math.

Klein works with single parents and displaced homemakers in changing circumstances. She finds they need communication skills--written and oral--and help with developing appropriate interpersonal relationships (inappropriate comments, alienate others). Often they have personal barriers too, such as a need for better parenting skills and life skills such as budgeting money. Most need to develop a positive personal presentation to help them with interviewing and getting a job as well as an awareness of the importance of positive behaviors, including good attendance and eliminating tardiness to keeping a job.

In January, 1996, Northfield Alternative Learning Center English teacher David Bly, met with Lyceum members to explain his program and to characterize his students. He explained that the ALC attracts students from four or five school districts who are often one to two years behind in their work. They may be chemically dependent, new parents, or have other obstacles to obtaining a high school diploma. Of the 16 year olds, most are from Northfield. A class requires 6-8 hours per week of seat time, classes are smaller and they receive credit week by week. They must do the work in order to pass, with requirements being the same as for the regular high school. There is free child care four mornings and one evening per week. Last fall, the ALC started with 95 students, increasing to 130 and then decreasing to 70 students by January.

Behavioral concerns about recent high school graduates as post secondary students or employees are being expressed both locally and nationwide. Results of a poll by Nation's Business (October, 1995), indicate that 43% of the respondents cited poor attitude and work habits as "the most common shortcoming of job applicants." Sixty-seven percent of the respondents also placed "primary responsibility for educating and training workers" squarely on the shoulders of public and private schools, including community colleges.

The Design of the Study

Methodology

This research project covered an eighteen-month time period. Initial theory grounding was obtained by a literature review, and by discussions with local educators and lyceum presentations from business employers, technical college counselors, and academic college personnel to obtain their perspectives of what they were looking for in high school graduates.

From these discussions and meetings, a series of common themes emerged that eventually became the basis for the eleven domains which the research investigated. These domains included: decision making, handling conflicts with other people, information gathering and management, intercultural awareness, looking for and keeping a job, mathematical reasoning, oral communication, personal awareness, reading, technical literacy, and writing.

An instrument was designed with Likert rating scales to measure the respondents' perceptions of their levels of experience, skill, confidence and frequency (of occurrence) pertaining to each domain. The respondents were also given the opportunity to write additional comments to several open-ended questions, and nearly all respondents took advantage this. Prior to distribution, the instrument was pilot tested at several sites.

By analyzing both the quantitative and qualitative responses, the Lyceum sought to identify connections between the respondent's perceived ability to apply the tools described in the eleven domains as a means of making a successful transition to adulthood and the school district's curricular program. To provide additional information for the study, essay comments from the qualitative section of the instrument were analyzed and recorded. Responses were coded and quantified by a research team, and notable essays and common themes were marked for inclusion in the text of the report.

The quantitative data was stratified into three levels based on the student's academic performance in high school, and analysis of variance (ANOVA) models were used to determine the existence of significant differences among means. Indicators used as determinates for stratification were grade point average, class rank, and ACT/SAT scores. Additional linkages were examined from the perspective of gender and certain social/cultural contextual influences.

Domain Definition

The eleven domains addressed in this study represent the broad areas deemed important to post-secondary success, and were chosen by the Lyceum study group after reviewing research literature and listening to the presentations at the meetings described above. These domains were not intended to be all inclusive, but rather, important to well-being and reasonably measurable.

The process for choosing each domain was as follows: Members of the study group individually submitted domain entries they felt represented the interests of the various presenters, the research literature, and their own insights. At a later date in a round-table discussion, study members were asked to explain and defend their choices of domains. Upon the conclusion of the discussion, the domains were listed and each member was asked to pick their top four choices. After additional discussion, this process resulted in the selecting of these eleven domains defined in the following way:

> Decision making includes things like how you choose a place to live, decide among potential roommates, choose a car to buy, make medical decisions, etc.
>
> Handling conflicts with other people includes things like how you settle arguments or disagreements, and how you communicate with people when you are having problems in the relationship.
>
> Information gathering and management includes things like how you get information on a certain subject, find resources and reference materials to use, or find people or things that can help you locate and keep track of information.
>
> Intercultural awareness includes things like how comfortable you feel interacting with people of races or ethnic groups different from your own.
>
> Looking for and keeping a job includes things like how you interview for jobs, interact and communicate with co-workers and supervisors, and receive good evaluations from your supervisors.
>
> Mathematical reasoning includes things like how you calculate sums (with your checkbook, on an income tax form, for example), keep track of numbers or inventories.

Oral communication includes things like how you are able to talk in front of other people, to give directions, a class presentation, or even to teach a small group of people how to do something.

Personal awareness includes things like how you keep track of how you are feeling, how well you understand the reasons why you are feeling the way you are, how "in touch" you are with yourself and your feelings.

Reading includes things like how you read technical articles, novels, popular magazines, newspapers, textbooks.

Technological literacy includes things like how you figure out how to operate electronic equipment or computers, learn to use new equipment, and keep up with technological developments.

Writing includes things like how you compose a note, letter or write an essay.

Instrument Design

The survey instrument used for this study was designed by the Lyceum research team. During the course of its development, the instrument was pilot tested at several sites and went through a number of transformations.

It was important to the Lyceum that the instrument design would accurately tap the perceptions of the respondents. Initially, it was hoped that an instrument could be developed that would relate current life situations to earlier educational experiences, but this route carried too great a potential for error since the passage of time could easily cloud perceptions. Subsequently, prototypes that made direct references to curricular areas were discarded and a format that asked for perceptions relating to experience, skill, confidence, and frequency of the eleven domains was chosen. Five open-ended questions were included to give the respondent opportunities to add comments and clarification.

This "domain design" format went through several transformations as well. The first design efforts included scenarios in an attempt to provide some commonality of setting, so the respondent's perception of the situation (or domain) would be similar. In pilot testing, this design proved to be too cumbersome, both in length and readability.

The scenarios were shortened, but the loss of contextual meaning, combined with readability problems, caused the scenario format to be dropped all together. In place of the scenario, a carefully worded definition of the domain was inserted. To provide commonality among the respondents' interpretations of the domain, the same four areas, namely, experience, skill, confidence and frequency, with similarly worded questions, were asked for each domain. (See Exhibit 1)

This format was pilot tested with both current students at the Alternative Learning Center and with a class of graduate students at Mankato State University. In addition, it was reviewed with a number of earlier pilot test subjects that had responded less than favorably with earlier designs. The results of this piloting were positive and the instrument design was accepted.

Data Sources

It was recognized by the research team that time could play a factor in the amount of recall and connectedness with matters learned in school, and that the further out the respondent was from graduation, the less likely the information would be attributable to school experiences. Likewise, the team was aware that 'it takes a whole community to educate a child,' and that the social context of the home and community played a significant role in each respondent's development.

Nevertheless, the research team believed that reasonably salient data could be drawn from the responses of two recently graduated classes, one class being three years out from graduation, the other being one year out. Last known addresses of the graduates of these two classes were obtained from the school files, as were the addresses of all the graduates of the Alternative Learning Center (ALC) during the same time period.

All members of the above three groups (N = 485) were sent a copy of the instrument. The return rate, taking into account undeliverable mail, from the entire data set was thirty percent.

Results

We begin with a presentation of the survey data, focusing on statistical analyses of participants responses to the rating scales. Next, we turn to an examination of some of the individual observations and reflections that came from the open-ended items.

Rating Scale Data

We first examined the data from the class of '93 and the class of '95 to see if there were any overall sample differences. We found no differences in gender, marital status of parents, number of siblings, or birth order between these two groups of respondents, so concluded that it was safe to collapse over this variable in the analyses reported below.

Figures 1-4 present the overall mean ratings, by domain, of experience (Figure 1), skill (Figure 2), confidence (Figure 3), and frequency of occurrence (Figure 4). We will discuss each set of results in turn.

To explore individual differences in responses, we divided the participant pool into three "ability groups". We first computed the z-scores of a student's SAT or ACT score, high school grade point average, and class rank (to put these all on a common scale). We then computed a new variable "ability," defined as the mean z-score of these variables. Using this newly-created variable, we divided the sample into thirds. For expository purposes, we refer to these groups henceforth as the lower ability, average ability, or higher ability group. Mean scores, GPA's, and class ranks for the three groups are presented in Table 1.

Academic Variables by Ability Group

	ACT Scores	H.S. GPA	Class Rank
Higher Ability	26.80	3.67	89
Average Ability	22.67	3.11	63
Lower Ability	19.10	2.50	32

Table 1

Quantitative Results by Domain

The total set of mean ratings, by the domains of experience, skill, confidence, and frequency of occurrence are presented in Table 2. The numbers represent the means derived from the numeric responses of the sample. The scale was based on a Likert-type scale range of 1 - 9, with lower to higher representing least to greatest.

The domain results, in both this quantitative section and in the qualitative section to follow, are presented and discussed in the same random order that they appeared on the survey instrument. This is done so the reader can approach the domains in the same sequence as the respondents did, thereby conveying that no bias was leveled toward any one particular skill area, academic, interpersonal, or life skills.

The domains judged by the research team to represent academic skills are mathematical reasoning, oral communication, reading and writing. Those domains representing interpersonal skills are handling conflict with other people, intercultural awareness and personal awareness, and those representing life skills are decision making, information gathering and management, looking for and keeping a job, and technological literacy.

Domain Means

Domain	Experience	Skill	Confidence	Frequency
Decision	7.09	6.86	6.90	7.24
Conflict	6.91	6.78	6.78	5.50
Information	6.63	6.46	6.60	6.22
I-cultural	6.31	7.03	7.26	5.85
Job	6.77	7.12	7.32	
Math	6.91	6.96	6.85	6.50
Oral Comm	6.87	6.72	6.55	6.68
Pers Aware	7.91	6.84	6.84	7.05
Reading	7.29	7.16	7.19	7.17
Technology	6.48	6.30	6.19	6.22
Writing	7.25	6.71	6.61	7.06

Table 2

Rated Level of Experience

Ratings of experience were subjected to a 2 (gender) x 3 (ability group) x 11 (domain) mixed ANOVA, with repeated measures on the last variable. Results showed a main effect of domain $F [10, 1100] = 4.34$, $p < .001$, MS error = 1.90. Post-hoc Tukey tests showed that students rated reading, writing, personal awareness and decision making significantly higher than they did technological literacy and intercultural awareness, ($p < .05$). Gender ratings differed as a function of domain, ($F [10, 1100] = 4.75$, $p < .001$, MS error = 1.90). Significant gender differences were found for both reading and writing, with females providing higher ratings in both cases ($p < .01$). There was also a significant interaction between ability group and domain, ($F [20, 1100] = 1.84$, $p < .01$, MS error = 1.90). Specific comparisons showed that the only significant group difference occurred for the domain of reading, in which higher and average ability students rated themselves as having significantly more experience than did lower ability

students. (There were also significant main effects of gender, (F [1, 110] = 9.60, p< .01, MS error = 11.46), and ability group (F [2, 110] = 3.16, p< .05, MS error = 11.46), but neither of these was of interest to this study).

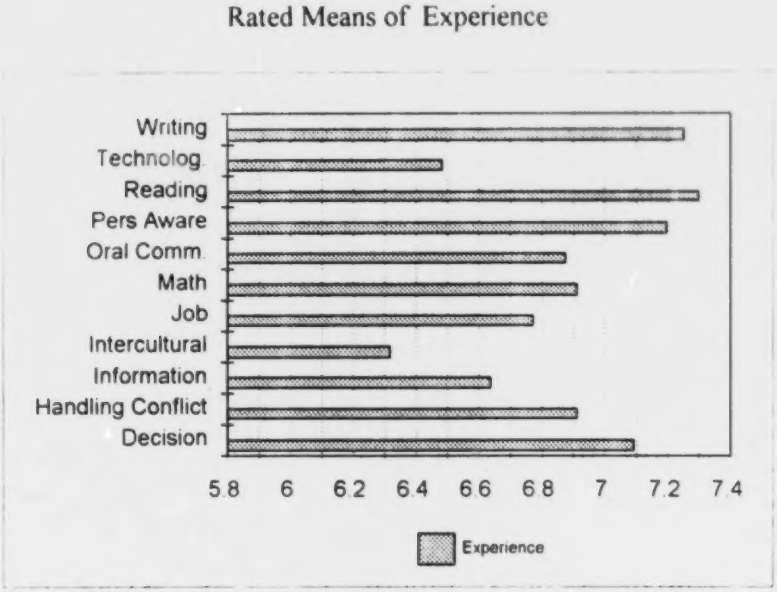

Figure 1

Rated Skill

Ratings of skill were also subjected to a 2 (gender) x 3 (ability group) x 11 (domain) mixed ANOVA, with repeated measures on the last variable. The same pattern of results emerged. There was a significant effect of domain F [10, 1100] = 3.83, p< .001, MS error = 1.86. Post-hoc Tukey tests showed that students rated reading and job skills significantly higher than they did information gathering and technological literacy, ($p < .01$). Gender ratings differed as a function of domain, (F [10, 1100] = 6.23, p< .001, MS error = 1.86). Significant gender differences were found for both reading and writing, with females providing higher ratings in both cases ($p < .01$). There was also a significant interaction between ability group and domain, (F [20, 1100] = 2.08, p< .05, MS error = 1.86). Specific comparisons showed that for the domains of reading, mathematical reasoning, and information gathering, higher and average ability students rated

themselves as having significantly more skill than did lower ability students. For the domain of reading only, average ability students rated themselves significantly higher than did lower ability students. (There were also significant main effects of gender, (F [1, 110] = 4.77, p< .05, MS error = 11.02), and ability group (F [2, 110] = 5.16, p< .01, MS error = 11.02), but neither of these was of interest to this study).

Rated Means of Skill

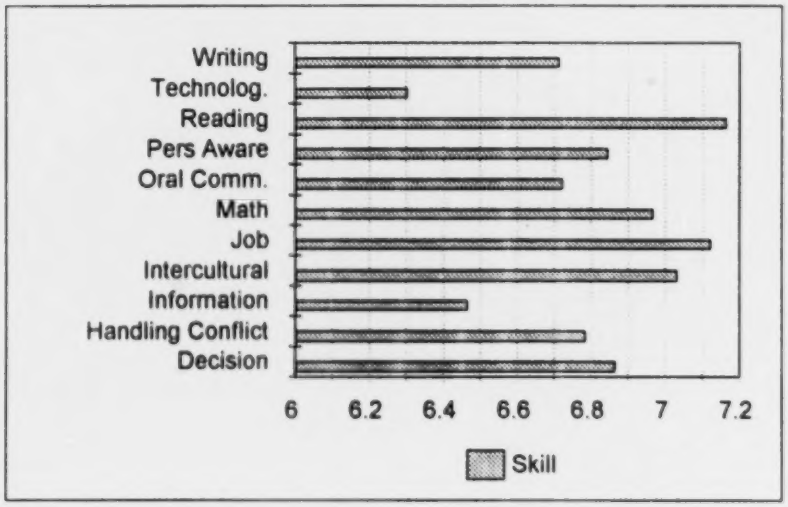

Figure 2

Rated Confidence

Ratings of confidence were also subjected to a 2 (gender) x 3 (ability group) x 11 (domain) mixed ANOVA, with repeated measures on the last variable. Once again, there was a significant effect of domain F [10, 1100] = 4.97, p< .001, MS error = 2.20. Post-hoc Tukey tests showed that students rated their confidence in job skills and intercultural awareness significantly higher than they did oral communication and technological literacy, ($p < .01$). Gender ratings again differed as a function of domain, (F [10, 1100] = 6.06, p< .001, MS error = 2.20). Significant gender differences were found, for the third time, for both reading and writing, with females again providing higher ratings in both cases ($p < .01$). There

was also a significant interaction between ability group and domain, (F [20, 1100] = 1.83, p< .05, MS error = 2.20). Specific comparisons showed that for the domain of mathematical reasoning higher ability students rated themselves as having significantly more confidence than did lower ability students ($p < .05$), and in the domain of reading, both higher and average ability students expressed significantly more confidence than did lower ability students. In contrast with the last two analyses, there were no overall significant main effects for gender or ability group difference.

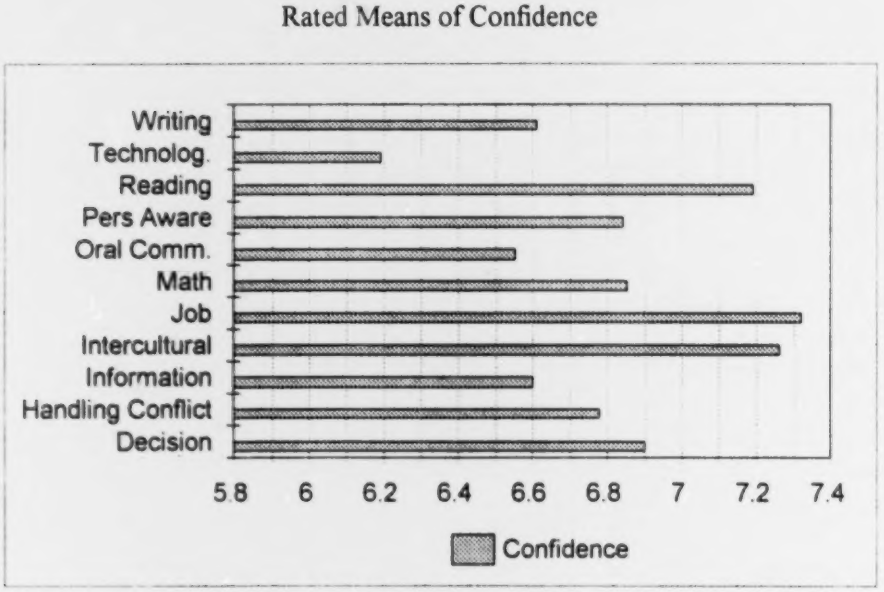

Figure 3

Rated Frequency

For this question, we analyzed the data for the jobs question separately (finding no differences), as the scale was different for this item than for others. The remaining ratings were subjected to a 2 (gender) x 3 (ability group) x 10 (domain) mixed ANOVA, with repeated measures on the last variable. Once again, there was a significant effect of domain F [9,990] = 10.81, p< .001, MS error =2.88. Post-hoc Tukey tests showed that students rated the frequency with which they encountered or used intercultural awareness or handling conflicts as significantly lower than

they did decision making, reading, writing, personal awareness, or oral communication ($p < .01$). Gender ratings again differed as a function of domain, ($F [9, 990] = 5.49$, $p < .001$, MS error = 2.88). Significant gender differences were found, for the fourth time, for both reading and writing, with females again providing higher ratings in both cases ($p < .01$). There was also a significant interaction between ability group and domain, ($F [18, 990] = 1.75$, $p < .05$, MS error = 2.88). Specific comparisons showed significant group differences only in the domain of reading, with higher ability students giving significantly higher ratings than lower ability students. (There was also a significant main effect of gender, ($F [1, 110] = 15.31$, $p < .001$, MS error = 10.08), but it was not of interest to this study).

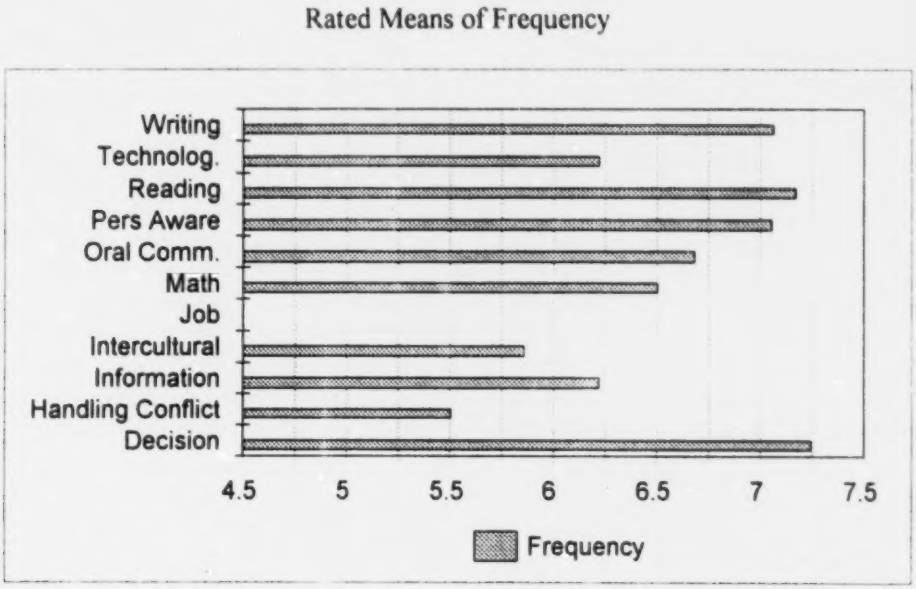

Figure 4

Qualitative Responses by Domain

The following analysis of qualitative responses is derived from a compilation of the comments to the open ended questions. These questions asked the respondent about their perceived strengths and weaknesses of the listed domains, and suggestions for ideas that would have improved their schooling both during and prior to their high school years. (See Exhibit 1)

Decision Making

Although the term"decision making" was not a popular descriptor used by many of the respondents in their essay responses, it was evident from what they said that decision making played a very large role in their daily activities. As one former student put it, "I learn from my own mistakes -- my own experiences. Since a lot of my experiences have been tough, I've become strong through learning from them." Another gave a somewhat similar but more academic response: "I became good at logical and systematic problem solving when I was in high school (or earlier) but it wasn't until my first couple of years of college that I really learned to apply these skills to difficult problems or decisions."

Another former student, after describing an ethnic background that differed from the majority in the community said, "My parents were not very involved in [the] decision making process concerning such things as sports, classes, career choice and other extra-curricular activities. I was forced to make these decisions myself." One graduate, referring to decision making as a weakness simply stated, "Decision making has always been hard." Another graduate spoke of decision making as a strength and credited "family, coaches and teachers." Yet another respondent wrote, "I think that my strengths lie in decision making. My experiences in high school helped me become a better decision maker. I had to make many difficult decisions during high school regarding my future and I know this made me a stronger person."

Two respondents wrote quite different views about their strengths as decision makers. One stated, "My strengths come from support from my family and friends and a lot of it is from my genetic ability to think fast and make good decisions." The other wrote, "I don't always know what I want at first so I often pray about the decisions I must make. We face all kinds of decisions everyday and it's important to know how to handle them -- confidently."

Finally, two other graduates spoke of the introspectiveness of their decision making. One said, "I'm very strong about what I believe and I think that's what leads to my decisions that I make." The other stated succinctly, "Independence and trust helped me with decision making."

Several graduates said that decision making had always been hard for them without any further comments. Others blamed their weakness in decision making on their parents. One stated, "My parents never really forced me to make decisions for myself, so I could rely on them to help me make decisions." Echoing a similar sentiment, another wrote, "I have always been a bad decision maker. In high school and younger I never had to make important decisions. Most of them were

always made for me."

A couple former students wrote about feelings associated with shyness, and how that affected their decision making experiences. One respondent, after listing decision making, oral communication and handling conflicts with other people as weaknesses, wrote, "I happen to be shy and reserved. I can't really blame anyone for it, just circumstance. Guidance about shyness or fears and overcoming them should be available."

Data Box 1

Number of respondents naming 'decision making' as a particular strength:	N = 20	14.8% of total
Number of respondents naming 'decision making' as a particular weakness:	N = 10	7.4% of total

(Editor's note: Data Box information is for descriptive purposes only.)

Handling Conflicts with Other People

For the most part, recent graduates reported feeling quite confident about their ability to handle conflicts with other people. When asked to discuss the domains they felt strongest or weakest in, those identifying 'handling conflicts with other people' as a strength outnumbered those identifying it as a weakness by more than a three to one margin.

"Having attended Northfield I had to contend with many conflicts. I learned how to keep a cool head and think out before reacting out," was the statement made by one former student which seemed to be reflected in the comments of others as well. For example, one respondent wrote, " I remember running into many conflicts throughout grade school and middle school. I think all this practice helped me to deal with conflicts in a positive way."

Other respondents approached the conflict issue from more pragmatic perspectives. One wrote, "An area of strength for me is handling conflicts with

other people. When I am angry with someone, I will tell them and work it out before it may get out of hand." Another described a slightly different situation: "Another strength I have is handling conflicts with other people. I have three other roommates with whom I share a house, and we fight sometimes and have to settle things in order to keep from fighting."

One graduate gave credit to the extra curricular area involvement by stating, "My greatest strengths would be how I handle conflicts with others, communication, and decision making. I believe that [these] three areas are all related in some way During high school I was involved in team sports, RALIE and many other committees. The extra curricular activities taught me to relate with and cooperate with a variety of people and personalities. They taught me to take control of situations, be a leader, and how to communicate both in large and small groups."

For some who mentioned handling conflicts with other people as one of their weaknesses, the theme of shyness or isolation seemed to reappear, somewhat similar to that noted by those who felt difficulty with decision making. One respondent wrote, "Handling conflicts with others is hard for me. In school I kept to myself and when I graduated I had to learn how to deal with conflicts and now...it's a challenge." Another commented, "I've never been very good at letting people know when I have a problem with them...I can't really argue...I usually just start crying."

Another graduate, after listing both personal awareness and handling conflicts as particular weaknesses offered the following comment: "Personal awareness and handling conflicts with other people are my weaknesses. I guess we need to give students more of a chance to learn interpersonal communication skills. Not one class in high school taught me to 'get in touch' with myself."

Data Box 2

Number of respondents naming 'handling conflicts with other people' as a particular strength:	N = 31	23.0% of total
Number of respondents naming 'handling conflicts with other people' as a particular weakness:	N = 9	6.7% of total

(Editor's note: Data Box information is for descriptive purposes only.)

Information Gathering and Management

As an educational domain, information gathering and management received the least amount of comments in the essay section of the survey. Of the four respondents that spoke of information gathering and management as a strength, two mentioned it in conjunction with job skills and two aligned it with library and research skills. One graduate stated, "Gathering information is easy to do - libraries are always accessible and in school I was encouraged to ask lots of questions." Another reported, "School helped me with information management because of the many research projects."

Those respondents who listed information gathering and management as a particular weakness, usually gave some suggestions as to why they perceived it as a weakness. One said, "We didn't receive much help when it came to gathering information. We were given an assignment and told to do it, but we were never really told how to gather the information necessary to complete the task." Another wrote, "Information gathering and management would be one of my weaknesses. I always feel uncomfortable when I need to do a research topic; I feel overwhelmed with the information and am unsure what to do with it."

With less detailed responses, two other former graduates addressed weaknesses related to the area of information gathering and management. One said, "I just don't enjoy gathering information from libraries to do research, etc."; the other stated, "information gathering and management - lack of practice in school and afterwards."

Data Box 3

Number of respondents naming 'information gathering and management' as a particular strength:	N = 4	3.0% of total
Number of respondents naming 'information gathering and management' as a particular weakness:	N = 9	6.7% of total

(Editor's note: Data Box information is for descriptive purposes only.)

Intercultural Awareness

Responses to intercultural awareness produced somewhat mixed results. For the most part, the recent graduates rated their skill and confidence in intercultural awareness quite high, while giving themselves considerably lower marks in experience and frequency (refer to the quantitative data results).

In a similar manner, the essay responses to intercultural awareness appeared to leave some unanswered questions. Those listing intercultural awareness as one of their particular strengths, gave a wide range of accompanying explanations and reasons to define the rational behind perceiving this area as a strength. Among the reasons given were having college friends of other ethnic backgrounds, moving from Northfield and living or working with people of other cultures, traveling experiences to different cultures, being a minority growing up in Northfield, and getting to know most of the foreign students that attended Northfield High School. Several respondents simply listed intercultural awareness as a particular strength and gave no explanation as to why they categorized it as such.

Conversely, those listing intercultural awareness as a particular weakness were nearly unanimous in their reasoning for this weakness. While a couple respondents mentioned a lack of interest in cultural diversity, all of the remaining respondents in this category listed the lack of cultural diversity and/or exposure during their years in Northfield as the reason for this area to be their personal weakness.

Data Box 4

Number of respondents naming 'intercultural awareness' as a particular strength:	N = 13	9.6% of total
Number of respondents naming 'intercultural awareness' as a particular weakness:	N = 13	9.6% of total

(Editor's note: Data Box information is for descriptive purposes only.)

Looking For and Keeping a Job

For the most part, recent graduates felt very confident about their abilities to look for and keep a job. Several respondents wrote about how they had worked hard and successfully received promotions. A large number mentioned the importance of promptness, reliability and honesty on the job. One stated, "I'm good at looking for and keeping a job. Throughout my life I have been taught to be responsible, reliable, and most of all, honest. I feel all of these qualities have benefitted me in keeping a job." In a similar vein, several mentioned the importance of persistence and sticking with a job for awhile even if it wasn't exactly what they thought it was going to be. "Growing up I was taught to be persistent and to stick with the choices I made," was how one respondent stated it.

Several respondents associated their success in looking for and keeping a job with a personal sense of confidence and self esteem; but the source most often credited by former students who listed job seeking and keeping as one of their personal strengths, was their parents, for providing the ethics and attitude necessary for job success. A former student wrote, "Keeping a job is crucial. I didn't learn much about that in school. My Mom had taught me that I needed a job to support myself on my own and without it I'd be on the streets."

Editor's note: Only five subjects responded that looking for and keeping a job was a particular weakness of theirs. Of the essays submitted by these subjects, no reason for this weakness was duplicated by two or more subjects, nor did a common theme emerge as an identifying descriptor.

Data Box 5

Number of respondents naming 'looking for and keeping a job' as a particular strength:	N = 20	14.8% of total
Number of respondents naming 'looking for and keeping a job' as a particular weakness:	N = 5	3.7% of total

(Editor's note: Data Box information is for descriptive purposes only.)

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Mathematical Reasoning

The domain of mathematical reasoning was claimed by a relatively large number of respondents as an area of strength. A unique characteristic that appeared in the essays associated with this domain was that they seemed to cross a wide spectrum of aptitudes and applications. Respondents spoke of using mathematical reasoning in college calculus courses and in making change as check-out clerks, in balancing checkbooks and filling out income tax forms, in being a table waiter in restaurants and in doing inventories for businesses.

One other unique characteristic of this domain was the large number of former students who credited certain math teachers with encouraging and instilling their love for math. Several teachers were mentioned, some, quite often. The following quote from a former student who wrote about math as a particular strength, typifies this honoring acknowledgment: "Mathematical - my math courses, in particular, my three years with [teacher named]. [Name] was one of the best teachers I ever had in high school."

Several respondents spoke of their math teachers in more general terms without mentioning any specific names. One wrote the following essay: "Mathematical reasoning has always been my strength. I owe it to my wonderful Northfield math instructors both in middle school and high school!"

Of less fortunate distinction was the fact that a relatively large number of respondents also listed mathematical reasoning as a particular weakness. Many of these former students blamed themselves for their lack of math skills, often citing a lack of interest in or aptitude for math. As one respondent put it, "Mathematical reasoning is my weakness. I think I've always grown up with weak mathematical reasoning. [It] has never been fun for me."

Some of the respondent's remarks seemed to beg for help or for a chance to start the math learning process over again as the one who wrote, "I wish I could do math without a calculator or count on my fingers." Reflecting back on some missed opportunities another stated, "I have always struggled in math...I spent a lot of time bouncing from teacher to teacher to find one I could really learn from. Because of my bad experiences with math in the early years of high school, I did not take the calculus class I should have my senior year. I regret that decision now that I'm in college."

Data Box 6

Number of respondents naming 'mathematical reasoning' as a particular strength:	N = 32	23.7% of total
Number of respondents naming 'mathematical reasoning' as a particular weakness:	N = 25	18.5% of total

(Editor's note: Data Box information is for descriptive purposes only.)

Oral Communication

Oral communication also received a large number of respondents who claimed it as a particular area of strength, and an almost equally large number that considered it an area of weakness. Of those believing oral communication to be one of their strong areas, nearly all associated it with jobs or situations that put them in close contact with a variety of people. Most seemed to express a high level of satisfaction that they could communicate effectively in a variety of settings. "Oral communication would be one of my high points. I am always talking with people at my current job whether it be on the telephone or in person," was a typical comment.

Graduates who had found success with oral communication credited a wide number of sources for that success. Approximately half credited a specific teacher or referred to certain classes that had helped them. Others gave the credit to a family member, extracurricular activities such as theater and the Arts Guild, outside of school activities such as 4-H, or the situation they found themselves in after graduation such as the military services or college. Some just simply credited themselves. It appeared that a relatively high level of personal confidence accompanied the feeling of successful oral communication skills.

If it is true that personal confidence can be associated with strong oral communication skills, would the reverse also be true, that weak skills might lean toward lower confidence levels? Although this question is outside the scope of this study, a reading of the responses given by those former students that listed oral communication skills as a particular weakness might indicate a relationship may exist. One respondent wrote, "I feel very insecure about opening up my thoughts in front of people. I think they'll think I'm dumb." After listing oral communication

as a weakness another said, "I never really talked up in class in high school because I was worried what the other students would think of my comments; now in college I don't speak up in class a lot because I am worried what my professor will think of my comments."

Some talked of lacking oral communication skills in particular areas such as at job interviews or speaking in front of groups. Several mentioned that they felt they received too little training on speaking in front of groups while they were in high school. While some blamed the system for not demanding more from them while they were learning oral communication skills, others said their skill was improving with time.

Data Box 7

Number of respondents naming 'oral communication' as a particular strength:	N = 37	27.4% of total
Number of respondents naming 'oral communication' as a particular weakness:	N = 28	20.7% of total

(Editor's note: Data Box information is for descriptive purposes only.)

Personal Awareness

A relatively large number of respondents consider personal awareness to be an area of particular strength, but few related that strength directly to their schooling. Most gave credit for their strength in personal awareness to their parents, family or friends. One respondent wrote, "The personal awareness I learned from my mother. She always encouraged me to reflect on my feelings and actions and how they related."

Others weren't sure where this particular strength came from. "Personal awareness -- I have no idea who, or if there is a who, that has to do with how in touch I am with myself. [It's a] totally independent thing," was the statement made by one graduate who listed personal awareness as a strength along with three other academic domains.

A couple of former students mentioned that counseling had helped them understand themselves better, but for another, getting out of school provided the answer. This respondent wrote, "Getting out of school let me get in touch with myself. Now all my time is my time and I can choose where and how I want to spend it and who I want to spend it with."

As might be expected, those listing personal awareness as a particular weakness had some difficulty explaining its existence, but a couple comments deserve noting. One wrote: "Personal awareness is one of my weaknesses. I am very aware of my feelings, but have a hard time understanding why I feel the way I do. I think I am weak in this area because there were never any classes that dealt with this issue properly."

The second quote reflects again, a lingering strain of lacking self confidence. This former student wrote, I have a hard time relating my feelings to people for fear that I'll hurt them or their feelings."

Data Box 8

Number of respondents naming 'personal awareness' as a particular strength:	N = 28	20.7% of total
Number of respondents naming 'personal awareness' as a particular weakness:	N = 8	5.9% of total

(Editor's note: Data Box information is for descriptive purposes only.)

Reading

Many of the former students that listed reading as a particular strength said they read a lot simply because they liked to read. Some credited specific teachers or parents with getting them interested in reading. Others said it was because they were either read to at a young age, or encouraged to read when they were young.

For many, reading was more than just an academic activity at school. "I would say reading is a strength of mine," wrote one graduate. "I have always had an interest

in reading. When I lived at home I read at least 2-4 books a week." Another said, "I invested a lot of time reading on my own outside of school."

Some graduates credited certain programs or teachers with reading success. One mentioned the ALC teachers and a program that gave credit for reading and writing about books: "I really began to love reading and writing. I think I ended up reading way over 100 books and graduated with extra English credits. Today I still go to the library to find books."

One respondent associated a particular strength in reading to the work of a third grade teacher at Greenvale. For some, that seemed to be the age when reading became a regular part of their activities. Another respondent wrote, "I started reading for fun when I was in about third grade, and I never stopped. I guess it was just something I wanted to do."

Finally, a number of respondents related reading skills to success in college. Some mentioned how they had worked to improve their reading skills. One respondent wrote, "Reading has become a strength. Since starting college I have had to become a much better reader."

While a relatively large number of graduates listed reading as one of their particular strengths, there was also a sizable group that listed it as a particular weakness. Some former students wrote about personal handicaps that made reading difficult for them. Others spoke about not being interested in or not liking to read, and some criticized the system for not helping them learn to read better.

Of the common themes that emerged from the essays of those listing reading as a particular weakness, two appear to stand out. The first is that students who get a late start in enjoying reading activities tend to list reading as a weakness. The second is that students who realized their reading weakness in the later grades, were either unsure of how to get remedial help or felt that help was difficult for them to obtain.

Number of respondents naming 'reading' as a particular strength:	N = 35	25.9% of total
Number of respondents naming 'reading' as a particular weakness:	N = 20	14.8% of total

Data Box 9

(Editor's note: Data Box information is for descriptive purposes only.)

Technological Literacy

Technological literacy was particularly notable because it was the only domain where recent graduates overwhelmingly listed it as a weakness. The significance here is that technological literacy also received the lowest confidence rating of all the domains in the quantitative data.

Those former students who listed technological literacy as a strength crossed a broad spectrum of mechanical interests, ranging from mechanical building and repair to computer programming. One respondent wrote, "I have built car stereo systems for myself and others." Another said, "Because of [teacher named] I had a very in depth teaching in computer programming. As a result, I am doing the best in college in the programming courses."

Several former students that mentioned technological literacy as a strength also mentioned the experience they had received from working in the computer labs at school. One student wrote, "My biggest strength is technological literacy just because throughout my life I have taken things apart and put them back together. I have always been interested in computers and through the high school I have practiced these skills in the computer labs and such."

Those former students listing technological literacy as a particular weakness tended to account for this weakness by saying that they would have liked more training in this area while they were in school. One graduate stated, "My weaknesses are definitely technological literacy and writing. I wish now that I would have had more information of this sort taught to me in high school. After

one year of college, I now realize the importance of these two areas in the academic environment." Another former student simply wrote, "More classes for slower learners with computers."

Other respondents had similar statements about their weakness in technological literacy. A fairly large number stated that they lacked experience in this area. The following essay comment reflects the sentiment of many respondents: "I feel that I am particularly weak in the area of technological literacy. I really haven't had that much experience or background in this area and therefore I really am not that accomplished at it." Another stated, "I did not have a computer at home, so not having many computer courses in school made the situation even worse!"

Other respondents simply stated a dislike for technological literacy and connected that with their lack of skill. One stated: "I don't enjoy technological literacy. I am not interested in that area and am, therefore, not very skilled in it."

Finally, a few respondents felt that had they been encouraged in this area, it might not have been a weakness for them. One wrote, "I think my weaknesses consist mainly of technological literacy and oral communication skills. No one ever pushed me towards these areas, so I feel that is why I am lacking in them." Another was more gender specific, "My weaknesses are in the area of technology. I don't understand the way mechanical things work (computers, cars, etc.) perhaps because - as a female - I wasn't encouraged to learn in these areas."

Data Box 10

Number of respondents naming 'technological literacy' as a particular strength:	N = 15	11.1% of total
Number of respondents naming 'technological literacy' as a particular weakness:	N = 33	24.4% of total

(Editor's note: Data Box information is for descriptive purposes only.)

Writing

Writing, the last domain addressed by the survey instrument, was another area that many graduates listed as either a particular strength or a particular weakness. With sixty respondents noting writing as either a strength or weakness, only oral communication, with sixty-five listings, had more acknowledgments in the essays.

In their essays, many respondents that listed writing as a strength, acknowledged the efforts of the Northfield schools and often certain teachers who they believed helped them develop their writing skills. It was also common for the respondents to group writing with other skill areas. The following quote is typical: "I owe a lot of my writing and reading skills to Northfield Public Schools. I've found that I am a much better writer than the other students in my classes here at [college]."

In a similar vein another former student wrote, My areas of strength are reading and writing. I think that Northfield High School has a very good English program. I took a lot of English classes and felt that most of the teachers I had were very good." Another said, "My writing skills are probably one of my greatest strengths ...but I also had some very encouraging English teachers."

Several respondents seemed to refer to writing as much more than an academic activity as is evidenced by the following essays: "My strongest ability is writing," wrote one respondent. "I have consistently received high marks and honors for my writing, both fiction and non-fiction. I also enjoy writing. My teachers really encouraged my writing. I developed great pride in this ability." Another stated, "Writing, many past friends that I had in school, the friends I have now, my surroundings and what I did in my free time, what my opinions have turned into from experiences, all my past has created how I write now and how I will write in the future."

Finally, one additional essay merits quoting. This graduate wrote, "Writing has always been a strength. I think it goes back to childhood when my parents often read to me. I've always been a careful observer of how things are written. My school experiences always positively fostered my writing skills. There was always repeated reinforcement in the direction of writing research papers, but opportunity, too to creatively write."

For those who found writing a particular weakness, there was often an application skill that seemed to be missing. One former student wrote, "Writing would have to be my weakness. I can get the ideas together in my head, but not on paper."

A fair number of graduates mentioned realizing a weakness in writing skills once

they got to college. One stated, "My writing skills are still rather weak and this was especially apparent when I was at [college named]. I was not capable of writing a paper deserving of a grade higher than B-. My writing skills have improved, but they still inhibit me from expressing myself clearly and efficiently. I blame much of my writing weakness on the NHS English department and their inability to prepare me for the writing skills necessary for college."

This sentiment was echoed by other respondents. "I used to think I was a pretty good writer," one former student wrote, "but since I have gotten to college, my grades on papers have shown otherwise. This may be that my HS teachers didn't grade papers very hard." Another respondent stated, "Writing - I learned very little about how to write. My English courses were very weak in teaching essay writing skills. Once I came to college, I basically had to learn how to write papers."

Not all graduates that listed writing as a particular weakness blamed their teachers for their lack of writing skills. Many admitted that they simply were not interested in writing. One stated, "I feel my writing is a low spot. I believe I was under-prepared for college in this sense both due to my own lack of interest and the lack of resources at school."

Other respondents wrote about a lack of interest in writing. "I am strong in many areas except writing or reading," wrote one. "These are my weak areas because they have never interested me." Another graduate concurred, "Writing - struggled in school with English, it did not interest me." Finally, admitting that spelling was a problem, one graduate simply said, "Writing - I'm not a good speller."

Data Box 11

Number of respondents naming 'writing' as a particular strength:	N = 36	26.7% of total
Number of respondents naming 'writing' as a particular weakness:	N = 24	17.8% of total

(Editor's note: Data Box information is for descriptive purposes only.)

Other Qualitative Responses

Three other open-ended questions not directly related to the eleven domains appeared on the survey instrument. These questions asked the respondent to list any specific suggestions that 1.) would have improved their overall high school program, 2.) would have improved their schooling prior to entering high school, and 3.) to name the one best thing that came to mind when thinking about the time spent in the Northfield Schools. The responses to these essays were then coded on a taxonomy of frequently mentioned themes devised independently for each of the three questions.

In the first question, the theme of "increasing academic rigor and opportunities" received an overwhelming number of responses. A total of fifty-six respondents (41.5%) gave suggestions for either offering more learning opportunities or upgrading the expectations of the current course work. Three closely related areas, increasing instructional versatility, increasing opportunities in the computer-technology area, and increasing college prep courses were also high on the list of suggestions that would have improved the high school program of these graduates.

The specific suggestions given by the respondents crossed a broad spectrum of ideas that ranged from adding more advanced placement classes to establishing a program that would allow for one-on-one learning. One respondent suggested bringing some recent graduates back to act as mentors. Another wanted each student to have a teacher advisor. Some wanted more English and math courses, others suggested more business classes. Many wanted more exposure to computers. Others wanted to learn techniques for good job interviews.

Of those that made specific course suggestions, speech and oral communication classes seemed to appear the most. One former student wrote, "Having more opportunities to speak in front of groups is something all high school students need. This is especially important when finding jobs - one should be able to articulate well and communicate properly in different types of situations."

A few graduates wanted a curriculum that was less geared to college prep, and one suggested that the school place more value on skill learning. Others mentioned the need to learn good study skills and develop ways to motivate the students more. Several students mentioned the need to learn how to write large research projects, and one graduate wanted training in thinking skills: "I would have liked more classes that required students to think critically and develop analytical skills. I would have liked to know how to apply the knowledge I learned."

Many other respondents asked for a course structure that was more rigorous

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academically. One graduate stated bluntly, "The academically gifted are really left out on their own." Another former student made this recommendation, "More challenging, engaging courses across the whole range of disciplines. Classes like [teacher and class named] were exciting and fun because they were tough, and I felt challenged - felt I was working hard, but getting a lot out of it. But in many of my other classes, I felt as though I wasn't expected to put much effort into my work, and I found that to be frustrating and disappointing."

Nearly twenty percent of the respondents thought that increasing offerings and opportunities in the life skills area would have helped their high school education, and approximately fifteen percent said that more guidance and support services would have benefitted them.

Most of the respondents, when speaking of life skills, mentioned job related activities or interpersonal and communication ideas, but one former student seemed to be reaching deeper. This respondent, when making a suggestion that would have improved the high school program said, "[To have] talked or learned more about personal awareness/self esteem and personal joy/happiness - these are much more important."

Data Box 12

Q: Please list any specific suggestions that would have improved your overall high school program. (Responses ordered by themes)

	N	% of total
Increase academic rigor and opportunities:	56	41.5%
Increase instructional versatility:	36	26.7%
Increase course offerings in life skills area:	26	19.2%
Increase guidance and support services:	20	14.8%
Increase opportunities in computers and technology:	19	14.1%
Increase college prep offerings:	13	9.6%
Allow more freedom from regulations:	8	5.9%
Increase offerings and activities in the arts:	7	5.2%
Need a more positive school climate	4	3.0%
Increase extra curricular and social activities:	3	2.2%
Other suggestions	8	

(Editor's note: Data Box information is for descriptive purposes only. Open-ended questions allowed for multiple suggestions; therefore totals and percentages are unbounded.)

The second question, which asked the graduates for suggestions of what would have improved their schooling prior to entering high school, received far fewer responses than the previous question. It is most notable, however, that again, the suggestions centering around increased academic rigor and opportunities were far more frequent than any other suggestions. Nearly thirty percent of the respondents listed ideas that were associated with increasing academic rigor, and within this category most of the suggestions centered on teaching more grammar, teaching better study skills, providing opportunities for learning a foreign language prior to entering high school, and tightening grading standards.

Among the comments and suggestions made by the former students were these: "a stronger grammar program", "being able to learn a language earlier would have been nice", "I felt my reading skills could have been better if I had been paid attention to...don't let the kids slip through", "make classes harder to prepare you, and have more study skills taught", "more classes that were focused with deadlines as motivations would have been helpful", "more advanced classes in math and science", and again, listed by several respondents, "teach grammar!"

Regarding the grading system, several former students wished that the grading policy would have been harder at the Middle School. One wrote, "[class name] was just a big waste of time where everyone got a good grade (C+ or better)." Another suggested, "A little bit tougher on grades at the Middle School. You could get away with barely doing anything and still pass."

Other themes offered by the graduates for improving their schooling prior to high school, were not strongly represented by very large numbers of graduates, except for the suggestions of increasing guidance and support services which was made by approximately ten percent of the respondents.

Data Box 13

Q: Please list any specific suggestions that would have improved your schooling prior to entering high school. (Responses ordered by themes)

	N	% of total
Increase academic rigor and opportunities:	39	28.9%
Increase instructional versatility:	6	4.4%
Increase course offerings in life skills area:	10	7.4%
Increase guidance and support services:	13	9.6%
Increase opportunities in computers and technology:	3	2.2%
Allow more freedom from regulations:	0	.0%
Increase offerings and activities in the arts:	0	.0%
Need a more positive school climate	1	.0%
Increase extra curricular and social activities:	4	3.0%
Other suggestions	3	

(Editor's note: Data Box information is for descriptive purposes only. Open-ended questions allowed for multiple suggestions; therefore totals and percentages are unbounded.)

The final question on the survey asked the former students to mention one best thing that came to mind when they thought about the time they spent in the Northfield Schools. Two categories dominated the answers, teachers and friends. Together, the two categories were listed by well over half of the respondents, attesting, most probably, to the intensity and importance of human interaction and individual social relationships in the educational experience.

A second area, this one dealing with larger group experiences, accounted for approximately one-third of the responses. This area included specific classes and extra curricular organizations and activities. Overall climate and atmosphere of the school accounted for about sixteen percent of the responses, and specific events were mentioned by about ten percent of the graduates. Of all the respondents, only three reported deeply bitter feelings about their school experiences in Northfield.

Teachers seem to leave the most impact on the minds of the students. Many teachers were individually named by the respondents, and many former students wrote how much certain teachers had helped them and how much that meant to them.

In answering this final question, many respondents simply listed the names of some of their favorite teachers; others wrote things like, "[Name] was the greatest teacher in the world." But most of the respondents wrote statements like the following: "The teachers made a difference, there were some very excellent teachers", "Teacher relationships - great appreciation to my teachers for their help in obtaining my goals", "I definitely remember how most (not all) of the teachers really cared about me and my education. I feel I received an excellent education at Northfield - thank you!", "Great teachers, they helped you learn and treated you nicely."

A few respondents mentioned how much it meant to them to have the teachers remember their names, even after they had graduated. One wrote, "The way most of the teachers care about you. I run into some of them now and they do remember who I am, they make you feel special." Finally, one graduate gave all the teachers an especially glowing complement: "The love and consideration of all the teachers. They all seemed to take a great deal of interest in the lives of all students. Thank you."

Friends and relationships also played a major role. One graduate noted, "The friendships I made through classes, dance line, and other activities." Others said, "My friends and just life in general was fun", "Being with friends. Having classes together", "My great friends!", "The friends I made and all the fun that I had during school. I have so many great memories", "The friendships that were formed with coaches, teachers, and staff. Also with friends."

Other respondents spoke about relationships that had developed over many years and what certain relationships meant to them: "The sense of community. The group I went to Kindergarten with, graduated with me", "Making the friends I still have today. Friends play a huge role in decision making", "The best thing that comes to my mind is all the friends I made throughout my schooling. I made friends for life and I will never forget all the fun I had with my friends", "All the great friends I made and will always treasure forever."

Many graduates mentioned certain classes as the one best thing that came to mind regarding their schooling. Relating to certain classes, students again displayed a broad spectrum of interests, ranging from wood shop to German, from calculus to English, from science to landscaping, from history to autos, and from art to band.

In a similar vein, extra-curricular organizations, especially the sports teams and coaches, were noted by several respondents. Many sport activities were mentioned including wrestling, swimming, and cross country, track and football, while others mentioned dance line, cheerleading, and theater. Often the writer would relate how the lessons learned from working together as a team helped them understand

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decision making, cooperation, dedication, and leadership.

Data Box 14

Q: What one best thing comes to mind when you think about the time you spent in the Northfield Schools? (Responses ordered by themes)

	N	% of total
Teachers:	51	37.8%
Friends:	41	30.4%
Specific classes:	28	20.7%
Extracurricular organizations:	26	19.3%
Overall school climate/atmosphere:	22	16.3%
Specific events:	14	10.4%
Other:	7	

(Editor's note: Data Box information is for descriptive purposes only. Open-ended questions allowed for multiple suggestions; therefore totals and percentages are unbounded.)

Analysis

This study examined the views held by recent graduates as they perceived their strengths and weaknesses in the general areas of academic skills, interpersonal skills, and life skills. Included in the academic skills area were the domains of mathematical reasoning, oral communication, reading and writing. Combined in the area of interpersonal skills are the domains of handling conflicts with other people, intercultural awareness, and personal awareness. Life skills included decision making, information gathering and management, looking for and keeping a job, and technological literacy.

The *Results* section presented the data from the perspective of the individual domains. In this *Analysis* section, the data will be analyzed from the broader areas of academic, interpersonal and life skills.

Practical Cognition and Skill Relationship

Recent work in cognitive and developmental psychology has focused upon broader cognitive skills as they are used outside the classroom or laboratory (Galotti, 1994; Sternberg & Wagner, 1986; 1994). Researchers in those traditions speak of *situated cognition*, arguing that the way in which a task is carried out depends heavily on the situation, or context, it occurs in. As a concrete example, Ceci & Roazzi (1994) report on the mathematical reasoning of poor Brazilian children who work as street vendors. When given a formal, decontextualized, school-like problem (e.g., "How much is 76 + 50?"), only 37% of the children gave the correct answers. However, when these same children were approached in the streets as they were working, and asked a structurally similar question (e.g., "If a large coconut costs 76 cruzeiros, and a small one costs 50, how much do the two cost together?"), children solved 98% of the problems.

This dramatic result suggests that the academic shills learned in the classroom may not always be reflected in contexts outside the classroom. Thus, one of out goals was to see how well our sample of respondents felt prepared to apply their skills, both academic, interpersonal, and life, once they finished their formal secondary education.

Academic Skills

As a group, those domains listed as the academic skills, namely mathematical reasoning, oral communication, reading and writing, received the highest mean ratings of all three groups in terms of frequency, skill and experience. Interestingly, graduates did not feel an equally high level of confidence about their academic skills.

One question that might be asked is, "If graduates often apply their academic skills, have a high level of experience, and feel skillful at using this knowledge, why don't they also possess an equally high measure of confidence?" Perhaps some insights to answering this question can be gained from the responses found in the essays.

Each academic skill domain contained not only high numbers of respondents listing it as an area of particular strength, it also contained high numbers listing it as an area of particular weakness. In fact, if all the numbers from the essay section were totaled, it would show that the domains listed in the academic areas were cited 140 times as an area of strength and 97 times as an area of weakness. These numbers are far greater than the combined numbers from either the interpersonal or the life skills domains.

What this may be saying is that although there is a relatively large majority of the graduates that are faring well and are able to readily apply these academic skills, there is also a significant proportion of the population that is not assimilating these skills. A closer look at some of the domains may help clarify this.

Within the academic skills area, the domain of oral communication is perhaps unique. This domain received the greatest number of citations as an area of strength; it also received the second highest number of citations as being an area of particular weakness. Oral communication received the second lowest mean in rated confidence, but received mid-level rating in skill. These data would tend to indicate that some graduates have acquired both skill and confidence in the domain of oral communication, and leave the school program fairly well prepared to use their skills, while at the same time, a sizable portion of others believe they have neither a high level of skill nor confidence in this domain.

An examination of the numbers and comments associated with the other academic domains, namely mathematical reasoning, reading and writing, would tend to support the findings explained as they were related to oral communication. Each domain had high numbers of citations as an area of strength, and notably high citations as an area of weakness.

Reading, for example, received the highest mean rating in experience, the second highest mean ratings in frequency and skill, and the third highest mean rating in confidence. Yet twenty respondents listed reading as a particular area of weakness. The question must be asked, "Can an educational system afford to graduate nearly fifteen percent of its population who perceive themselves to have weakness in reading?"

Interpersonal Skills

The interpersonal skill domains, namely those represented by handling conflict with other people, intercultural awareness and personal awareness, received very high mean ratings in the areas of experience, skill and confidence, but relatively low ratings in terms of frequency. An analysis of these combined means might indicate that the recent graduates feel both skillful and confident about their interpersonal abilities, but do not have occasion to draw upon these skills very often.

In the essay portion of the survey, the domains associated with interpersonal skills generally received fewer citations than other domains for being either an area of particular strength or weakness. However, the comments made by former students who cited these domains as either areas of strengths or weaknesses tended to follow a couple of common themes.

Many former students tended to speak of these domains as relating to their own personality traits. To a large degree, students who listed these domains as areas of strength tended to disassociate these characteristics with schooling, referencing instead their personal makeup, which they described as being derived either from biological inheritance or contextual factors based mostly outside of school. Items mentioned as outside influences included parental influence, travel, ethnic background, and other miscellaneous factors not directly associated with school.

Conversely, former students who felt that these areas were particular weaknesses of theirs, often seemed to be asking why someone wasn't there to help them. Several mentioned the need for more school counseling and personal growth services. Others mentioned how particularly problematic domains continued to provide ongoing struggles for them.

The domain of intercultural awareness provided mixed messages. Unlike the domains of handling conflicts with other people and personal awareness, both of which received much greater numbers of respondents citing them as a strengths rather than weaknesses, intercultural awareness received the same number of

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respondents claiming it as a strength and as those that claimed it as a weakness.

As a group, students felt quite confident and believed they possessed a high level of skill in intercultural relationships; yet they recognized their lack of exposure to other cultures. In written comments, students again tended to attribute strengths in this domain to factors not necessarily associated with school, while blaming the school for lack of training if it was cited as a weakness.

Life Skills

The life skills area encompasses the domains of decision making, information gathering and management, looking for and keeping a job, and technological literacy. Compared with the other two skills areas, the rated means of the life skills group ranked lowest in experience, skill, and confidence, while holding the midpoint in terms of frequency. Unique from this generalization were the domains of looking for and keeping a job, which received the second highest mean rating in skill and the highest mean rating in confidence, and technological literacy, which received the second lowest mean rating in experience and the lowest means in both skill and confidence.

Of the four domains in the life skills group, both information gathering and management and technological literacy were cited more often as particular weaknesses than as a strengths; and in both cases, it was by a margin of greater than two to one. Also noteworthy is the relatively large number of respondents who wrote essay remarks about technological literacy. In total, thirty-five percent of the respondents mentioned technological literacy in their written essays, with sixty-nine percent of that number citing it as a weakness. (This translates into twenty-four percent of the total set of responses that considered technological literacy a particular weakness.)

On the brighter side are those who noted a high level of skill and confidence in the domains of decision making and job seeking and keeping. This was reinforced by the comments in the essays where these domains were cited as areas of strengths over weaknesses by three-to-one and five-to-one margins, respectively.

Clearly, the general area of life skills contains a wide discrepancy of strengths and weaknesses. Information gathering and management and technological literacy were two domains which many graduates found lacking, whereas decision making and job seeking and keeping were two domains judged as relatively strong.

No specific academic labels are attached to any one of these domains, yet the concepts inherent to them are broadly distributed among many academic courses. Perhaps the findings brought forward by this study will alert the district to seeking and identifying areas where these weaknesses can be directly addressed.

Findings

1. For the most part, graduates expressed a high level of satisfaction with their education and rated it quite positively.

2. Of the eleven domains, graduates rated decision making, reading, and writing as the most frequently encountered, while handling conflicts with other people and intercultural awareness were the least frequently encountered.

3. Of the eleven domains, graduates expressed the highest levels of confidence in looking for and keeping a job, reading, and intercultural awareness, while feeling least confident about technological literacy, oral communication, information gathering and management, and writing.

4. Of the eleven domains, graduates rated their skill as being highest in reading, looking for and keeping a job, and intercultural awareness, and lowest in technological literacy, information gathering and management, writing, and oral communication.

5. Of the eleven domains, graduates rated their level of experience as highest in reading, writing, personal awareness, and decision making, and lowest in intercultural awareness, technological literacy and information gathering and management.

6. Females saw themselves as equally confident and skilled in all areas, including the domain of mathematical reasoning, which often shows women perceiving themselves as less skilled. In fact, in the domains of reading and math, females rated themselves significantly higher in levels of experience, skill confidence and frequency than their male counterparts did.

7. Higher ability and average ability graduates rated themselves significantly more skillful than lower ability students in the domains of reading, mathematical reasoning and information gathering and management (i.e., many of the academic and one of the life skills domains.)

8. Higher ability graduates expressed significantly more confidence in mathematical reasoning than lower ability graduates.

9. Higher ability and average ability graduates expressed significantly more confidence in reading than lower ability graduates, and higher ability graduates tend to read much more frequently than lower ability graduates.

10. Essay comments may indicate evidence of a widening gap of academic abilities with students at the top becoming increasingly dissatisfied because they are not being challenged enough, and students at the bottom becoming increasingly dissatisfied because they are not acquiring the needed academic skills.

11. In essay responses, graduates wrote they felt the strongest in the academic skills area, oral communication, writing, reading and mathematical reasoning.

12. In essay responses, graduates wrote they felt the weakest in technological literacy.

13. In answering the open-ended questions, graduates noted the themes of increased academic rigor and opportunities as the primary suggestion that would have improved their educational experience both in high school and prior to entering high school.

14. In answering the open-ended questions, graduates noted teachers as being the single best thing that came to mind when they thought about the time they spent in the Northfield Schools.

Recommendations

1. The District must continue to recognize the many diverse interests and needs of learners while establishing a baseline of achievement standards for all students.

2. The District must decide whether technological literacy, information gathering and management, and oral communication are important curricular priorities, and if so, develop strategies to incorporate a system of planning, evaluative and assessment tools around these areas.

3. The District should make a commitment to continuously upgrade its academic standards by steadily increasing academic rigor.

4. The District needs to investigate ways to motivate students to learn more.

5. The District needs to assure that students will obtain the necessary reading and writing skills prior to entering the secondary grades, or develop remedial reading and writing programs at the secondary level.

6. The District needs to identify and strengthen those academic areas that deliver content to the general domains of information gathering and management and technological literacy.

7. The District should determine if it intends to provide increased opportunities for assistance in personal growth for students, and if so, identify a track that makes these services readily available to those students in need.

8. The District should create ways of helping students understand job expectations and employment issues by improving and encouraging communication between employing businesses and the schools.

9. Data-based decision-making and periodic outcome assessments aimed at continuous improvement, need to be both building and classroom specific, and integrated with district goals.

10. The district needs to establish a logical and data-based system of measures to track the processes it uses to deliver its educational product, with specific goals and outcomes determined prior to the implementation of the processes.

Topics for further investigation

1. Investigate why graduates rated their skill and confidence very high in intercultural awareness but their experience and frequency quite low.

2. Investigate student strengths and weaknesses in oral communication by clearly distinguishing the different types of oral communication (large group presentation, small group discussion, one-on-one interaction, etc.).

3. Investigate why students rate themselves so highly (6.5 on a scale of 1-9). Related topics: To what degree do we see evidence of over-confidence in coupling student perspectives with employers' and college recruiters' expectations? Has grade inflation played a role in possible feelings of over-confidence?

4. Investigate if there is growing evidence that the curriculum and/or instruction is becoming more aligned to a bimodal system where emphasis is being placed on the students at the academic top and bottom at the expense of the students in the middle?

5. Investigate the type of reading materials students are experiencing and look for correlations between reading materials and reading comprehension.

Exhibits

EXHIBIT 1: *Transitions* Survey Instrument

All of the questions on this survey ask for your own perceptions or reactions--so there are no right or wrong answers, nor are we expecting any one particular response to any question. We are not so much concerned with the responses of any single individual, but want to look at such things as gender differences, age differences etc.

ALL OF YOUR RESPONSES WILL BE KEPT CONFIDENTIAL. ANY INFORMATION LINKING YOUR NAME OR OTHER IDENTIFYING INFORMATION WILL BE REMOVED AS SOON AS THE DATA ARE PROCESSED. THE MOST VALUABLE ANSWERS YOU CAN GIVE US WILL BE HONEST, CANDID ONES.

You are, of course, free to decline to answer any question. However, we hope you will be willing to answer them all, as the data are most useful when we have a complete set of responses from everyone.

THANK YOU IN ADVANCE FOR YOUR TIME.

BEST COPY AVAILABLE

Office use only Code number _____

Name (optional) _____ Phone number (optional) _____

Address where we can contact you if we need to (optional) _____

_____

Year of graduation from Northfield High _____ ALC _____ or last year you attended NPS _____

Gender (Please circle) female male

Number of brothers/sisters (including half-brothers and sisters) living in your house while you were in high school _____

Are you the oldest? youngest? middle child? 3rd of 7? please specify below

_____

Marital status of your parents while you were in high school (e.g., married, separated, widowed, divorced)?

_____

After leaving/graduating Northfield Public Schools, have you done any of the following:

Worked at a job? (Please circle) yes no If so, what kind, and for how long?

_____

Enrolled in a college or trade school? (Please circle) yes no If so, which school, and how long were you/have you been enrolled?

_____

Joined the military service? (Please circle) yes no If so, which branch, and how long were you/have you been enlisted?

_____

What are your career plans for the near future?

_____

What are your career plans for the long-term future (e.g., 5-10 years from now)?

_____

May we have your permission to examine your high school records, specifically to look at the courses you took, the grades you received, and the results of standardized tests you took? (Please circle) yes no

Would you be willing to speak by telephone with someone from the research team, for any follow-up questions we might have? (Please circle) yes no

(if you answered yes to either of these last two questions, make sure you have entered your name and phone number above)

Decision making includes things like how you choose a place to live, decide among potential roommates, choose a car to buy, make medical decisions, etc. Consider your own experiences with decision-making and...

Rate your own level of **experience** with decision making (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with decision making (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your ability to make decisions effectively (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How often do you make decisions? (circle one number).

1 2 3 4 5 6 7 8 9

very infrequently moderately frequently very frequently

Handling conflicts with other people includes things like how you settle arguments or disagreements, and how you communicate with people when you are having problems in the relationship. Consider your own experiences with handling conflicts with other people and...

Rate your own level of **experience** with handling conflicts with other people (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with handling conflicts with other people (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your ability to handle conflicts with other people (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How often do you handle conflicts with other people? (circle one number).

1 2 3 4 5 6 7 8 9

very infrequently moderately frequently very frequently

Information gathering and management includes things like how you get information on a certain subject, find resources and reference materials to use, or find people or things that can help you locate and keep track of information. Consider your own experiences with gathering and managing information and...

Rate your own level of **experience** with information gathering and management (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with information gathering and management (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your ability to gather and manage information, (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How often do you gather and manage information? (circle one number).

1 2 3 4 5 6 7 8 9

very infrequently moderately frequently very frequently

Intercultural awareness includes things like how comfortable you feel interacting with people of races or ethnic groups different from your own. Consider your own experiences interacting with people of a different race or ethnic group and...

Rate your own level of **experience** with interacting with people of a different race or ethnic group (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with interacting with people of a different race or ethnic group (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your ability to interact with people of a different race or ethnic group (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How often do you interact with people of a different race or ethnic group? (circle one number).

1 2 3 4 5 6 7 8 9

very infrequently moderately frequently very frequently

Looking for and keeping a job includes things like how you interview for jobs, interact and communicate with co-workers and supervisors, and receive good evaluations from your supervisors. Consider your own experiences with looking for and keeping jobs and...

Rate your own level of **experience** with job seeking and job keeping (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with job seeking and job keeping (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your ability to seek and keep jobs (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How many different jobs have you had since leaving school? (circle one number).

1 2 3 4 5 6 7 8 9

very few some very many

Mathematical reasoning includes things like how you calculate sums (with your checkbook, on an income tax form, for example), keep track of numbers or inventories. Consider your own experiences with mathematical reasoning and....

Rate your own level of **experience** with mathematical reasoning (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with mathematical reasoning (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your ability to reason mathematically (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How often do you use mathematical reasoning? (circle one number).

1 2 3 4 5 6 7 8 9

very infrequently moderately frequently very frequently

Oral communication includes things like how you are able to talk in front of other people, to give directions, a class presentation, or even to teach a small group of people how to do something. Consider your own experiences with oral communication and....

Rate your own level of **experience** with oral communication (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with oral communication (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your ability to communicate orally (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How often do you use oral communication? (circle one number).

1 2 3 4 5 6 7 8 9

very infrequently moderately frequently very frequently

Personal awareness includes things like how you keep track of how you are feeling, how well you understand the reasons for why you are feeling the way you are, how "in touch" you are with yourself and your feelings. Consider your own experiences with personal awareness and....

Rate your own level of **experience** with personal awareness (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with personal awareness (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your personal awareness (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How often are you aware of your feelings and the reasons for them? (circle one number).

1 2 3 4 5 6 7 8 9

very infrequently moderately frequently very frequently

Reading includes things like how you read technical articles, novels, popular magazines, newspapers, textbooks. Consider your own experiences with reading and....

Rate your own level of **experience** with reading (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with reading (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your reading (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How often do you read? (circle one number).

1 2 3 4 5 6 7 8 9

very infrequently moderately frequently very frequently

Technological literacy includes things like how you figure out how to operate electronic equipment or computers, learn to use new equipment, and keep up with technological developments. Consider your own experiences with technological literacy and....

Rate your own level of **experience** with technological literacy (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **skill** with technological literacy (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

Rate your own level of **confidence** in your technological literacy (circle one number).

1 2 3 4 5 6 7 8 9

low moderate high

How often do you learn to use electronic equipment, or spend time keeping up with technological developments? (circle one number).

1 2 3 4 5 6 7 8 9

very infrequently moderately frequently very frequently

Writing includes things like how you compose a note, letter or do an essay. Consider your own experiences with writing and...

Rate your own level of **experience** with writing (circle one number)

1	2	3	4	5	6	7	8	9
low				moderate				high

Rate your own level of **skill** with writing (circle one number)

1	2	3	4	5	6	7	8	9
low				moderate				high

Rate your own level of **confidence** in your writing (circle one number)

1	2	3	4	5	6	7	8	9
low				moderate				high

How often do you write? (circle one number)

1	2	3	4	5	6	7	8	9
very infrequently				moderately frequently				very frequently

Having read through and thought about the survey questions, please take just a few more minutes to answer the following, as thoroughly and thoughtfully as you can. Use additional paper if you wish.

Everyone has areas of strength, as well as areas of weakness.

Which areas (of the ones we asked you about) are <u>your</u> particular strengths? What people, events, or experiences, both in or out of school, have led to these becoming your strengths?

Which areas (of the ones we asked you about) are <u>your</u> particular weaknesses? What people, events, or experiences, both in or out of school, have led to these becoming your weaknesses?

Please list any specific suggestions that would have improved your overall high school program.

Please list any specific suggestions that would have improved your schooling prior to entering high school.

What one best thing comes to mind when you think about your time in the Northfield Schools?

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Addendum - Research model representing the *Transitions* project